

WHAT IS CLAIMED IS:

1. A method for plugging a cell of a honeycomb structure having a plurality of cells surrounded by partition walls and extending through an axial direction,
5 the method comprising steps of:

inserting a plugging member formed in predetermined shape into the cell; and

bonding the plugging member to the partition walls surrounding the plugging member, to form a plug portion.

10

2. The method for plugging the cell of the honeycomb structure according to claim 1, wherein the plugging member is an unfired ceramic molded body.

15

3. The method for plugging the cell of the honeycomb structure according to claim 2, wherein the plugging member is an unfired ceramic molded body formed by extrusion molding and/or press molding.

20

4. The method for plugging the cell of the honeycomb structure according to claim 1, wherein the plugging member is a fired ceramic body.

25

5. The method for plugging the cell for the honeycomb structure according to claim 4, wherein the plugging member is a fired ceramic body formed by molding the plugging member by the extrusion molding and/or the press molding, and subsequently firing the member.

6. The method for plugging the cell of the honeycomb structure according to claim 1, wherein the plugging member comprises a through slot and the plug portion is formed so that the through slot extends through the axial direction.

5

7. The method for plugging the cell of the honeycomb structure according to claim 1, wherein the plugging member has a columnar shape.

10

8. The method for plugging the cells of the honeycomb structure according to claim 1, wherein the plugging member comprises a concave portion, and the plug portion is formed so that the concave portion forms a concave in relation to a surface parallel to an end face of the honeycomb structure.

15

9. The method for plugging the cell of the honeycomb structure according to claim 1, wherein the plugging member comprises a convex portion, and the plug portion is formed so that the convex portion forms a convex in relation to a surface parallel to an end face of the honeycomb structure.

20

10. The method for plugging the cell of the honeycomb structure according to claim 9, wherein the convex portion comprises a portion having a pyramid shape or a conical shape.

25

11. The method for plugging the cell of the honeycomb structure according to claim 1, wherein the plugging member has a spherical shape.

12. The method for plugging the cell of the honeycomb structure according to claim 1, comprising steps of:
disposing a ceramic-containing bond material between the
5 plugging member and the partition wall surrounding the
plugging member; and firing the bond material to bond the
plugging member and the partition wall.

13. The method for plugging the cell of the honeycomb
10 structure according to claim 12, wherein a major component
of the bond material is the same as that of at least one of
the honeycomb structure and the plugging member.

14. The method for plugging the cell of the honeycomb
15 structure according to claim 1, wherein the plugging member
contains, as the major component, at least one material
selected from a group consisting of cordierite, alumina,
mullite, silicon nitride, and silicon carbide.

20 15. The method for plugging the cell of the honeycomb
structure according to claim 1, wherein the plugging member
has a catalytic activity.

16. The method for plugging the cell of the honeycomb
25 structure according to claim 1, wherein the plugging member
carries or contains a catalytic component.

17. The method for plugging the cells of the
honeycomb structure according to claim 1, wherein the

plugging member and the honeycomb structure contain the same ceramic as the major component.

18. A method for manufacturing a honeycomb plugged
5 structure, comprising:

plugging at least a certain cells of a honeycomb structure having a plurality of cells surrounded by partition walls and extending through an axial direction, the plugging proces comprising steps of;

10 inserting a plugging member formed in predetermined shape into the cell; and

bonding the plugging member to the partition walls surrounding the plugging member, to form a plug portion.